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CONTRIBUTED ARTICLES

SWEET CLOVER.

A Symposium On Its Value as a Forage Plant.

Some time ago we called for testimony from those who had experience with sweet clover as a food for stock, that

SWEET CLOVER—AN EARLY FORAGE-PLANT.

I have read Prof. A. J. Cook's article on sweet clover, published on page 97. I do not wish to enter into a controversy in regard to the use of mellilotus as a forage-plant—whether it is wise to try to use it for such purpose in all parts of our country can only be settled by fair trial. Sweet clover is not indigenous to our country, but both species have been brought from the Eastern World. These grasses were first placed by early botanists with the true clovers—red and the white. The Greeks establish the genus "trifolium," or the three-leaved plant, under the name "triphullon;" but later, when the Latin language was written, it was called "trifolium." Subsequently the two sweet clovers were separated from the clovers and formed the genus mellilotus. The Latin word



A Luxurious Growth of Sweet Clover in Genesee County, Michigan.—From Bee-Keepers' Review.

having been called in question. We have received several responses to that request, and herewith give some of them, following them with some extracts from other sources:

"mellilotus" was formed of the prefix *melli*, honey, and *lotus*, some leguminous plant.—Prof. Asa Gray.

One of the explanations of the use of *lotos* in the Latin is,

a plant serving for fodder, *melilot* (*Trifolium officinalis*). This settles that the yellow sweet clover was early used for forage. As Prof. Cook suggests, it is probably an annual. But if it furnishes a good flow of nectar it may be used to advantage; for the white is known to be a biennial, taking the second year to flower, and after it matures its seed the entire plant dies. To have sweet clover for the bees the next season we have only to sow the seed of the yellow in the fall that the white dies, or early the next spring, and if it is an annual it will flower early in June here in Chicago; a full month before the white comes into bloom. Or bee-men may have a bloom of the white sweet clover every year by sowing its seed every year, and not without.

D. S. HEFFRON, M. A.

Cook Co., Ill.

COWS EAT SWEET CLOVER IN FRANKLIN CO., MO.

It is strange indeed to see how widely men's experiences differ in the same pursuit, with the same thing. Some say that their stock can be educated to eat sweet clover. Mr. Lighton, on page 72 declares emphatically, "But I do know they simply will not eat sweet clover in any form."

Prof. Cook, a bright light who has dispelled the gloom from the field of bee-culture to a great measure, and has illuminated the way, also speaks depreciatively of sweet clover as a forage plant. I have 55 colonies of bees, and have had sweet clover growing on my farm for four years. My experience is that my stock, especially cows, eat it in any form—green or dry. I was somewhat surprised a few weeks after turning a fine Durham milk cow into a pasture where I had grown sweet clover, to find she had eaten the dry stems down to six inches of the ground. She did this in January, when the straw or stems were perfectly dry and apparently void of nutrition.

In making the above statement I don't want it inferred that I am casting any reflections on the statement of Mr. Lighton. I believe he has spoken truly his experience, but altogether the adverse to what I have experienced here in Missouri.

A. B. BATES.

Franklin Co., Mo., Feb. 7.

STOCK WILL NOT EAT SWEET CLOVER IN SALT LAKE CO., UTAH

There seems to be considerable discussion pro and con in regard to the merits of sweet clover as a fodder and honey-plant. Under favorable conditions it is an excellent honey-producer, but as a fodder-plant, if it has any advocates in Utah, I do not know it. In June, when it is young and tender, when one would think stock would relish it, they won't touch it as long as they can get other feed. I have fed it with lucern and other clovers and grasses, and they invariably pick out and eat the other feed. If we do not give them other feed they will pick off a few tender buds and leaves, but under no condition except sheer starvation will they eat the stems. But in August and September, where the stock is allowed to roam among it at will, they appear to eat considerable of it; but some people tell us that even then it is because they have nothing better.

Be that as it may, we find that it causes a profusion of bloom and honey, small shoots not over six inches high being covered with blossoms, and under favorable conditions the bees work on it till frost. But in Utah, to try to make a fodder plant of sweet clover, it would not be worth the cutting and hauling.

Of course, Utah has her lucern or alfalfa, which, we think, is the best fodder and honey plant on earth. I have known nine tons to be cut from one acre in one season, and nearly all living animals will eat it—even pigs and chickens will thrive on it if fed green; and under favorable conditions we think it is one of the finest honey-plants grown. But, like sweet clover and other honey-plants, it is not much good as a honey-plant in a rainy, wet climate. Sometimes we have an abundance of honey from sweet clover, lucern, and Rocky Mountain honey-plant; at other times little or none. It is not because there is no nectar in the blossoms—it is because the rain washes it out.

E. S. LOVESY.

Salt Lake Co., Utah.

STOCK EAT SWEET CLOVER IN WELD CO., COLO.

They are all having a drive at the sweet clover question, and yet I think they have not got the right end of some of the points. As to the question whether stock will eat it and thrive on it, I have seen enough to know that both horses and cattle do, and do it readily. It is simply one of those things that they not like when first tasted, but of which they grow fond with use.

In South Africa, when they wish to fatten a steer, I have heard they feed on sweet potatoes, and nothing else, and the beast won't start on them for about two days, and after hav-

ing them for a time will eat them by preference over anything else.

Right across the road from me there is a large field, part hay land, part rough, with cottonwood and willows; in this there is a quantity of sweet clover. I saw 70 head of cows, young steers and calves turned in there after the cleaner parts were cut last fall, when there was plenty of uncut hay and after grass, and saw the whole bunch eat the sweet clover chiefly and voluntarily the moment they were put in. Some were half Texans from the southern part of Colorado or New Mexico, some were natives.

The seedling sweet clover is very small in the early season, but grows quite heavy in the autumn, but does not flower, and stays soft, and gave in this case great pasture, and the stock flourished. I think it would make a fair crop of hay cut late in the fall, and the next season it would certainly cut an early crop of hay, and flower well afterwards for the bees, and if the land was then cultivated it would be got rid of pretty effectually.

WALTER A. VARIAN.

Weld Co., Colo.

STOCK EAT SWEET CLOVER IN CUMING CO., NEBR.

For the benefit of the American Bee Journal readers I will give my experience in regard to stock eating sweet clover. I have on my 160-acre farm about an acre of sandy land where I never succeeded in getting a satisfactory crop. So about six years ago I concluded I would have a crop of sweet clover there, but my experience told me that it would be a very difficult matter to get a catch by sowing the seed there, but I had a small patch, probably two or three rods, which stood very thick with one-year-old plants five or six inches high in the first part of May. A part of these—probably about 200 plants in all—were dug up and transplanted on that sandhill. They stood quite far apart, but they grew and bloomed that same year. In the fall, when the seeds were ripe, I scattered them all over the ground. The succeeding summer that hill presented a beautiful green spot; the clover grew over a foot high, but did not bloom until the year after, about the first of July. It bloomed the whole summer, and to my surprise the bees worked on it for two weeks after we had the first frost.

As I wanted a new pasture, ten acres adjoining this hill was sown to timothy, orchard grass, and blue grass. The sweet clover patch being almost in the center was fenced in with the rest. I really did not think at the time that my cows would eat the clover—it tasted very bitter. The cows were not put in the pasture until May of last year. The tame grass was then six to eight inches high, but it did not take long before they had found my sweet clover, and they kept it eaten down so low the whole season that only a spray of flowers here and there could be seen. The pasture was not overstocked, as six head of cattle was all that had access to the 10-acre lot.

I now concluded to sow more sweet clover, so 200 pounds was ordered, and 150 pounds was sown last October on 10 acres of wheat-stubble, and nothing more done to it. The balance of 50 pounds will be sown on the same 10 acres the coming fall. This is necessary in order to make it bloom every year.

You will get a catch of sweet clover best on very poor, solid ground, but it will grow equally well or better on good ground, providing that the weeds are cut often the first year. If left to grow they will kill the sweet clover. As it starts very slow, it is necessary to sow in the fall so the seeds can be softened during the winter and start to grow early in the spring. A zero spell will not kill the plants just coming out of the ground, if the ground is covered with stubble or other rubbish and dead weeds. Should the ground be clear or loose, the young plants will heave out and die.

Sweet clover transplants very well, and I have gotten such a high opinion of its merits, that if there was no other way of getting a few acres of it started, I would transplant one-year-old plants about 10 feet apart each way, which would only take a little over 400 plants to the acre. The year after I would plant 400 more between the others, and keep clean around each plant two or three months after they were planted. That would give them a sure start, and a growth of clover that would surprise all beholders.

If any one doubts that stock will eat sweet clover in preference to the best tame grass, he may call at my place in May or June, or any time while it is green, and I will convince him to his entire satisfaction that at least my stock is very fond of it.

J. F. ROSENFELD.

Cuming Co., Nebr.

IS SWEET CLOVER A NOXIOUS WRED?

This question has been up quite often the past few years

and is pretty well settled by this utterance of the Ohio Experiment Station, recently issued in a newspaper bulletin:

HOW SHALL WE RANK SWEET CLOVER?

Many portions of Ohio have the roadsides and other sodden or "out of tith" lands occupied by the whitesweet clover plant (*Mellilotus alba*, L.). Since it has been regarded as a noxious weed the former Ohio Statute placed it in the same list of proscribed plants with Canada thistle, common thistle, oxeye-daisy, wild parsnip, wild carrot, teasel, burdock, and cockle-burs.

Under the operation of this statute, private lands might be entered upon to destroy the mellilotus growing for any purpose as for bee-pastures. The destruction of bee-pastures in this manner actually occurred near Delaware.

Rightly, then, it may be asked, "How shall we rank sweet clover?" To answer this we must consider where sweet clover grows, and what is its character. Sweet clover grows spontaneously along tramped roadsides, even to the wheel-ruts in abandoned roadways, and in tramped or sodden land anywhere. When found in meadow lands it appears not to occur except when the ground has been tramped by stock when wet. It grows by preference in old brick-yards. It may be grown in fields by proper tillage.

The character of sweet clover may now be determined. Viewing it in no other light we thus see that sweet clover grows luxuriantly in places where few or no other plants flourish. But it belongs to the great class of leguminous plants which are capable, by the aid of other organisms, of fixing atmospheric nitrogen, and storing it in the plant-tissues. It belongs with the clovers, and it may thus be used to improve the land upon which it grows, and this appears to be its mission. It occupies lands that have become unfitted for good growth of other forage-plants. Its rank, then, is as a useful plant, capable of increasing fertility of land.

How shall sweet clover be treated?

The character determined, the treatment to be accorded this clover plant is really settled. The plant is the farmer's friend, to be utilized and not to be outlawed. The plant grows and spreads rapidly. So do red clover, white clover, timothy, blue-grass, and other forage plants; but sweet clover grows where they do not; it indicates lack of condition for the others. Viewed in this way it is to be treated as preparing unfitted lands for other crops.

It may be mown a short time before coming into bloom, and cured for hay. Stock will thrive upon it if confined to it until accustomed to it. The roadsides, if taken when free from dust, may be made almost as profitable as any other area in clover by cutting the sweet clover and curing for hay. If this is regularly attended to while stock is kept from other lands that it invades, sweet clover will be found doing always the good work for which it is adapted.

The italics in the above are ours. We wish that every one who has been against sweet clover could read that strong defense of it.

A MISSISSIPPIAN'S ESTIMATE OF SWEET CLOVER.

The following paragraphs appeared in the Agricultural Epitomist of last January:

At the North, *Mellilotus alba* is considered a weed and a pest—not looked upon with any degree of favor except as a valuable plant for bee-pasture. In the South, it is one of the most valuable fertilizing and hay plants we have; also highly appreciated for its early spring and late fall pasturage. Stock are not fond of the plant at first, but soon acquire a taste for it. For dairy cows the hay is specially valuable, very largely increasing the flow of milk and the yield of butter, improving the quality of both, in fact. None of the clovers are superior to it as a fertilizer. It grows satisfactorily only on land well supplied with lime. It is distinctively a lime plant, and if there is but a very small percent of lime in the soil it will not thrive well, and we advise against sowing on such lands. On our lime prairie soils of East Mississippi and Central Alabama this plant is largely grown. It thrives admirably with Johnson grass—in fact, the two supplement each other nicely. The strong, deep-penetrating roots of the mellilotus loosen up the hard subsoil, and enable the Johnson grass to grow off to better advantage.

It matters not how severe the drouth or excessive the rainfall, mellilotus is a certain crop—a sure crop, independent of any variation of the seasons—a plant that can be depended on.

As a fertilizing crop it cannot be excelled, if equaled, by any of the leguminous soil-recuperating plants. On soils where the highest limit of corn production did not exceed

eight bushels per acre, a few years of mellilotus-growing on the land so enrich the soil that 30 bushels of corn per acre was easily raised.

Mellilotus is a biennial, and reseeds itself every two years. It stands cold as well as alfalfa and red clover.

We have no seed for sale. We have no personal motive in speaking so highly of the merits of this plant. Recognizing these merits that characterize this plant, having personally witnessed the practical values of the plant on our own farm as a fertilizer, hay, and pasture plant, we feel in a humor to do it justice by giving greater publicity to its virtues.

Is it not strange that a plant that has proven itself so meritorious at the South, and growing steadily and continuously in favor here, has no friends in the North to sing its praises or accord it any worth whatever, save the apiarist—the owner and lover of the honey-bee?

Oktibbeha Co., Miss.

EDWIN MONTGOMERY.

After copying Mr. Montgomery's high testimonial to the value of sweet clover, Mr. A. I. Root has this to say in regard to it in Gleanings:

Please notice the writer is not a bee-keeper, does not sell seed, and has no interest in any shape in the matter. I would call special attention to what he says about its value in the South, and I want to add that we very much doubt whether there is a place in the North where cows cannot be taught to eat sweet clover when it is pastured or cut at the right stage of growth. I am sure there is not a locality anywhere where it will not prove to be one of the best plants known to enrich impoverished soil by plowing it under. Our experiment stations are pronounced in its favor wherever a test has been made. Since the matter has been suggested in regard to lime for its growth, I am inclined to think our friend is right about it. This thing, at least, is true: It will grow on ground so poor that no other plant can be made to make a stand. In fact, it grows with rank luxuriance on soil thrown out from deep railroad cuts; and such land can be made productive by plowing under a heavy growth of sweet clover, without adding anything else; and, astonishing as it may seem, where the ground is rich, and will grow all sorts of crops, we oftentimes fail to get a good stand of sweet clover.

A. I. ROOT.

In the April Bee-Keepers' Review appear several articles on sweet clover, and also the beautiful illustration which Editor Hutchinson has very kindly loaned for our use on the first page this week. From the articles in the Review, we copy the following, as it all comes in so nicely with the rest of our symposium on sweet clover:

HOW TO GROW SWEET CLOVER.

In my opinion sweet clover can be made to grow upon any soil by a proper supply of lime applied thereto, artificially. My plan would be to plant the sweet clover in hills, or drills, the same as corn, and then use a cup full, a pint, or possibly a quart of fresh slacked lime to each hill. I would use a hoe to make a depression to receive the seed, then cover with lime, and finish with soil. The seed will come up if covered two inches deep, more or less. No one need be afraid to use even a quart of slacked lime, if thought best, to each hill, for it is my belief that the sweet clover plant will grow and thrive in lime alone, and without a particle of soil! My experience along that line seems to corroborate that statement. Three to five seeds to each hill will be ample, for if but one of them germinates, the plant will make a stool large enough to shade the entire plat of ground; even if not closer than three feet apart each way.

M. M. BALDRIDGE.

Kane Co., Ill.

SWEET CLOVER MAKES GOOD PASTURE—EASILY ERADICATED.

I have sowed sweet clover upon pastures and waste-places for the last six years, and can say that it has filled the bill for stock; especially in dry seasons when other clovers and grasses are literally dried up. It is a mistake to say that stock will not eat it; as, after tasting it a few times, they give it a preference. Last summer I saw a pasture of 17 acres in which sweet clover was eaten down close to the ground, while Alsike, timothy, and white clover went to seed in the same lot. Just over the fence, in another lot, the sweet clover grew seven feet high, and so thick that one could scarcely pass through it.

It is called a weed by some, but this is not the case. Of course, if sown upon waste lands, such as swamps, open woodlands, clearings, etc., it will take the place of thistles and ragweed, and hold its own, but, as it dies root and branch the second year, there is no trouble getting rid of it. Not only

this, but it leaves the ground full of richness that it has brought up from the lower depths. A. A. ALVERSON.
Ottawa Co., Mich.

SOWING SWEET CLOVER—COWS EAT IT.

I have had six years' experience with sweet clover, and find that it will flourish in any place where Alsike or white clover will thrive; but it will not grow on "blow-sand."

I begin sowing it in the fall at the time that the seed is ripe, and continue until corn-planting time; sowing on the high land first and finishing up on low swamp-land. I sow it in waste-places, old slashings and pasture lots. In the fall of 1894 I seeded down 10 acres of land that had just been cleared and burned over. I sowed timothy, Alsike, and sweet clover, and went over it lightly with a drag. The following year I turned in seven cows. They did not touch the sweet clover until it was about two feet high, picking out the other grass that grew among it, then, as the hot, dry weather came on, they took to the sweet clover and ate it to the ground, allowing the other grass to grow up and blossom. The cows remained in good health, and gave good messes of rich milk. Ottawa Co., Mich. DAVID BERTSCH.

Well, what more need be said in defense of sweet clover? It seems to us about all that is needed is for farmers to get better acquainted with the various values of sweet clover, and then take full advantage of all that the plant has to recommend itself.



Against the Plain Section and Fence.

BY J. S. SCOTT.

I am a subscriber to the American Bee Journal, and my old partner takes Gleanings. I have read with interest all that has been said about the old no-bee-way section and (misnamed) fence separator. I have been anxiously waiting for something in reference to them from some large honey-producer, such as Capt. Hetherington, C. Davenport, and others.

We were persuaded a few years ago, by the "Sage of Medina," and the "Medicine Man of the Marengoes," that in the 1½ two-bee-way section and tin separator we had reached the acme of our pursuit, and advised to fall in line, which we did, and their praise has ever since been on our lips. But, behold! we are now advised to stop and turn back to the old no-bee-way section. This we could do were it not the demolishing effect on our bank account, for I feel that we could place before our customers just as nice a section of honey as we do now, but no nicer. It would cost—three of us who work together—at least \$700 to make the change, and at the present price of honey we cannot afford to do so.

I believe each individual speaks from his own personal standpoint, and I would like to ask the "Sage of Medina" who is to be benefited by the change. Certainly not the honey-producer, nor yet the consumer, for we now place before our customers a most attractive section of honey, fit for the lips of Jupiter.

I read Gleanings from Genesis to Revelation, and see the change strongly advocated, more so than elsewhere. They quote Aspinwall, in Review, as saying that the cost in shipping-cases and sections alone will be 51 per cent less. It is impossible for me to see how any one can believe this. Do the Roots ask less for the no-bee-way section than for the other? Will a shipping-case cost less with veneering between every two rows of sections together with follower and wedge? I think not. To say nothing of the difference in handling the sections by inexperienced clerks. I am slow to impugn the motive of any one, but I do not think we will be compelled to use a search-light to find the only persons who would be benefited by this change. I also believe that to agitate any change so costly is bad policy, unless it is plainly shown to be a benefit to the producer and consumer. I acknowledge that I can see neither in this.

I could say much more on this subject, but I do not wish to encroach more on your time. Utah Co., Utah.

[We would suggest that Mr. Scott try a few of the new things this year, and then if he likes them, and feels there is enough in the change to pay him and his two friends for making it, they can go ahead and spend that \$700. Otherwise, they'd better hang on to their bank account.

Be slow to make changes, until you have proven that the new in your hands is superior to the old.—EDITOR.]

COMB FOUNDATION.

How Much to Use in Sections, How to Cut and How to Fasten It.

BY G. M. DOOLITTLE.

I am requested to tell the readers of the American Bee Journal how much foundation I would use in the sections, how I cut the same (without having it stick to the knife, or breaking it), and how I fasten it in the sections.

The amount to use in each section is governed somewhat by the state of the "pocket-book," and whether you are going to give your increase on full sheets of foundation, or only on starters in the frames. If you must rob your family of necessities or comforts that you may buy foundation, then I should use only a triangular piece in each section, each of the three sides being 1½ inches long; or if I were to fill the brood-frames full of foundation for the swarm, then I should use starters in each section as above.

But if I had sufficient money so I could procure the necessary foundation, without a sacrifice to me and mine, then I should fill each section with *extra-thin* foundation to within ¼ inch of the bottom, and within ¼ of the sides of the section. This is what is called "filling the sections with foundation." And I should thus fill them if I allowed the swarms issuing from the apiary to build their own comb, which thing very many of our best apiarists consider just the thing to do. Any prime swarm has wax-secretion well under way when they leave the parent hive, it often being seen standing out in little white flakes from the wax-pockets, and if we furnish no place in which these new colonies can build comb, all of this secretion of wax is wasted (or often worse than wasted) by the bees using it in thickening the bases of the cells in the sections, this causing the consumers of our honey to growl about the "fish-bone" in the center of the honey. For this reason many of us think it best to let the bees use this wax in building brood-combs so as to allow no waste, and also because any section which is filled with foundation presents a much nicer appearance after being finished, as a rule, than does the one wherein the comb is nearly or wholly built by the bees. And all know that it is the *nice appearance* of comb honey which causes it to sell at fancy prices. When the bees will no longer build worker-comb below—as many new colonies will not—after being hived two or more weeks, then it is profitable to fill out the rest of the brood-chamber with frames filled with comb or comb foundation.

CUTTING FOUNDATION FOR SECTIONS.

The cutting of foundation was something which used to bother me as much as any one thing I did about the bee-business; after finding out how to do it, it seems very simple. The first requisite is a piece of ¾ lumber a little longer than any foundation which you will ever be likely to have, and as wide as two widths of the foundation, when two sheets are laid on it side by side. A 1½-inch nail should be driven near each end down through this board into the bench or table, or whatever you use it on, so as to hold it in place, and still allow of its easy removal when not in use. Next get out two strips from the ¾ lumber, two inches wide, and as long as the foundation-board which you have tacked to the table. Stand these by the side of the table or foundation-board, so they will nearly touch each edge of it; when you are to nail to the top of these strips a board from ¾-inch stuff, which is wide enough so as to come out even with the outer edge of each strip, and as long as is the foundation-board, nailed to the bench or table. Upon lifting it off you will have a shallow box without top or ends when turned over.

Now with a lead-pencil mark lines across the top at intervals, the distance between the lines being just the same as the width you wish your foundation after it is out. Now, with clinch nails, of suitable length, nail strips of the ¾-inch stuff across the top between the lines you have drawn, so that your shallow box need not split and fall to pieces after you have sawed through where you have marked the lines. Having these ¾-inch strips all nailed on, next, with a fine saw, cut through where each line appears, allowing the saw to cut down on the side strips to within ¼ inch of their cut-off, and you have the foundation-cutting form complete, except that I would nail on to one end of the table or bench board a strip three inches high, so that when laying the foundation on the board for cutting, each sheet could be brought up to this strip, thus "evening" the ends so that all might be exactly alike.

Now lay on sheets of foundation till you have from six to ten sheets deep, according as you find most convenient for you to cut, and then lay the same number by the side of the first pile, for you will remember that we are to cut two piles at once.

Having the two piles of foundation all even and nice on

the table or bench board, we now carefully place over it (and out against the guide-strip at the end which evens the foundation) the board having the saw-kerfs through it, when we are ready for the knife.

For a knife I prefer an old table-knife, such as our grandmothers used—one that has been worn till it is very thin, when the edge is made very sharp on an oil-stone.

Now to prevent the wax sticking to the knife was a problem on which I worked a long time. I was told by some to have the knife hot by keeping it in hot water; others advised the use of weak lye, honey, etc., all of which did not please me. Having a rag moistened with kerosene close by, and passing the knife over it before each stroke so as to moisten it with the oil, worked the best of any of these, and this plan was used until one day when I was in a great hurry I drew the knife through the foundation as quickly as possible, without bothering with any oil, when lo, and behold, the whole sticking matter was solved, for the friction caused by the rapid motion of the knife through the wax melted it to a sufficient extent so it did not stick to the knife at all.

To be sure I was right, I quickly drew the knife to the middle of the pile and stopt, allowing a few seconds to pass before I tried to go on again, when I found the knife was fastened and could not well be moved except by tearing the foundation. A later trial of several quick strokes with the knife and then suddenly putting it to the tongue showed that it was almost too hot to be borne without pain. I now have no more fussing with hot water, kerosene-oil, or anything of the kind, but draw the knife through the foundation just as rapidly as possible, when the cut edge of the foundation is left as smooth and shiny as though it had been melted in two. It is best not to bear down too hard in cutting, using two or three light strokes to cut through a pile of eight or ten sheets, rather than trying to cut through the whole at one stroke.

FASTENING FOUNDATION IN SECTIONS.

As to fastening into sections, I formerly used the brush or spoon plan of so applying melted wax that was spread on the foundation and the section at the same time, and in cooling it adhered to both. But of late I have used the heated-plate plan, by way of the "Daisy" foundation fastener, and I am satisfied there is nothing better. Onondaga Co., N. Y.

CONVENTION PROCEEDINGS

Proceedings of the Colorado State Convention.

REPORTED BY F. L. THOMPSON.

The 18th annual convention of the Colorado State Bee-Keepers' Association was held in Denver, Jan. 17 and 18, 1898.

REPORT ON HONEY ANALYSES.

The Committee on Honey Analyses made their report. Three samples of honey, two put up by a Denver firm, and one by a St. Joseph firm, had been purchased in the market, packed in the presence of two of the members, and sent to the State chemist, who analyzed them, and found that the Denver samples contained a considerable percentage of cane sugar syrup, and the St. Joseph sample was probably a solution of glucose with a piece of comb honey added. As a certain bee-keeper—a member of the Denver Bee-Keepers' Association—had stoutly asserted that the Denver firm was not guilty of the charge of adulteration, the Executive Committee, at a special meeting, decided to purchase a new set of samples and have them analyzed by another chemist. Accordingly the committee went together to the same business house where the previous samples had been purchased, secured another lot of honey put up by the same parties, and had them packed up ready for shipping by the clerk who sold them. The parcel was sent by express to an Eastern honey expert, who analyzed them with practically the same results as the State chemist had found. The agreement of the two analyses was considered sufficient evidence by the committee.

ROOM FOR HOLDING MEETINGS.

The committee on securing a room in the Capitol—E. Milleson—made the following report: "As a committee appointed to secure a room for the meetings of the State Bee-

Associations, I desire to report that the Capitol building still remains under the supervision of the superintendent of the building, and he is disposed to do the best he can in furnishing a meeting-place for the bee-keepers of the State; but we hardly see the way cleared for a room for our exclusive use."

LAW ON SPRAYING FRUIT-TREES.

The committee on securing a spraying law—F. L. Thompson—reported that a law had been formed, and adopted by the last legislature, so that it is now in force. It is to be found in Section 15, page 65, of the Session Laws of Colorado for 1897, and reads as follows:

"It shall be unlawful for any person or persons to spray fruit-trees while in bloom, with any substance injurious to bees. Any person violating the provisions of this section shall on conviction before any Justice of the Peace be liable to a fine of not less than \$5 or more than \$50....The proceedings of the State Bee-Keepers' Annual Convention shall be filed with the Secretary of the Board of Horticulture, who shall edit it and file with the Secretary of State, who shall cause the same to be published annually with the report of the Board of Horticulture."

E. Milleson, who is the fruit inspector of Arapahoe county, said he thought there would be a revolution in spraying materials, by the use of insecticides harmless to bees, and also said that the poisons now used were so largely adulterated as to not even harm the larvae.

S. M. Carlzen stated that a few of the horticulturists on the western slope, whose names he could not give, were making efforts to repeal the spraying law. This was confirmed by a letter from a western-slope bee-inspector, not read before the Association, which will appear later in this account of the proceedings.

SAMPLES OF HONEY-COMBS.

Pres. R. C. Alkin exhibited three sections containing septa of honey-combs, the rest of the comb and the honey having been removed, all built in the same super. One had been part natural comb, and part comb built on extra-thin foundation. The natural septum looked much lighter on account of the color of the wax, but the difference in thicknesses was small. But chewing showed a difference in quality, that of natural comb being more brittle. Another section contained a septum resulting from the use of deep-cell foundation. In eating, no difference could be perceived between it and ordinary foundation. The third section had contained very heavy brood foundation. This had been much thinned, and the wax used in building up the side-walls, also some deposited where the cell-wall joins the base.

H. Rauchfuss also exhibited a septum of comb from deep-cell foundation, and some finished sections in which deep-cell foundation, ordinary foundation, and Given rolled foundation had been used. Altho the Given rolled foundation was clumsy, the septum after completion was not so thick as that of comb from the deep-cell foundation. The latter was commenced sooner, but not finished sooner than the other.

SUNFLOWERS FOR SHADING HIVES.

Mr. Varian recommended the Russian sunflower as furnishing shade to the hives just when wanted, and not sooner. As the seeds stand the frost, they could be planted in the fall. They will grow on poor soil. About six should be planted about a foot from the hive, on the south side.

Pres. Alkin then read his annual address as follows:

President's Annual Address.

Fellow Bee-Keepers and Friends:—It is a pleasure to me to be with you. A little over one year ago I thought likely I should never meet with you again, much less to serve you as president of this association. I am intensely interested in our pursuit, and as well in the welfare of each of you, financially, morally and spiritually.

I wonder how many of you are here because you love your neighbors. I think we may say that most of us are here through one or both of two general motives—love of self and love for others. I trust that not one is here through selfishness only; at least I hope not. Personally, I feel sure that these annual gatherings cost me more in labor and thought than all I can get out of them as a money consideration.

While it is true that we may get value received on a money basis, there are other ways in which we may get well paid. It is a pleasure to me to see your faces, to shake the hand, to talk of each other's welfare, and to try to help each other. Brethren, try to get all you can that will benefit you financially and morally, but let your getting be of that kind that worketh both ways, charitable and full of love. "Give and it shall be given unto you; prest down, and shaken together

and running over, shall men give into your bosom. For with the same measure ye mete withal it shall be measured to you again."

Let us help each other. I know there is a large element in this world who would laugh at such advice and call it foolishness; but nevertheless the biggest fool of all is he who does not know the value of such advice. We are here to help each other—and ourselves. How can we best do this?

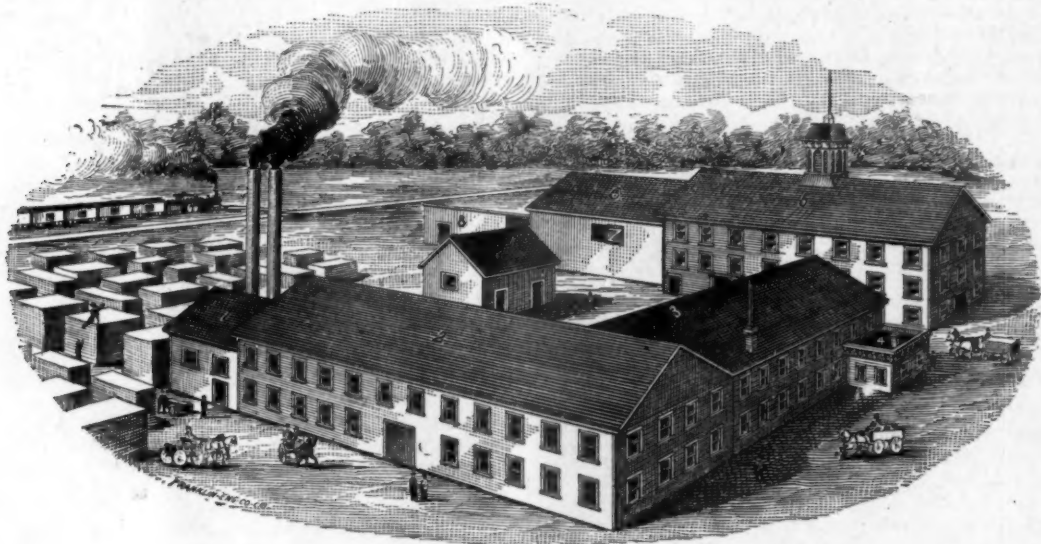
I believe it was two years ago that, in my address, I strongly urged this Association to a more thorough organization and co-operation. I again urge it. Trusts, combines, and monopolistic organizations are multiplying everywhere. Recently a trust representing millions of capital was organized to control one of our worst enemies—glucose. This is not the kind of organization I urge, for such a one is monopolistic, selfish, unkind, "giving that it may receive again." There is another kind of organization which is honorable and kind, that *receiveth that it may give*, and which we may call co-operation. Fellow bee-keepers, are not our hearts as one in this?

What shall be the work of this convention? How have you fared the past year? Tell us what you have produced, where and how you have sold it, and the remuneration. I find the burden of complaint to be "poor markets." We must not rest till something has been done to better the honey market. With laborers unemployed or poorly paid, with farmers and all classes of producers barely making a living, or going behind, there is no use to expect higher prices. Our duties in

sent to you later, I feel that then our organization will be on a more solid footing. It will then be in order for you to reach out to greater usefulness. I recommend that this Association do something toward the support of the United States Bee-Keepers' Union. I wish that every apiarist in the State were members of that association. Of course we want your membership in this Association, too, but you should not neglect the other. An advance of $\frac{1}{4}$ cent per pound on 500 pounds of honey would far more than pay your dues in both organizations, and I believe that a conscientious support of both would benefit you several times over all it would cost you.

In order to advance co-operation a better statistical plan is needed. I therefore recommend that you make arrangements by which our secretary and other officials of the organization may get into communication with apiarists in all parts of the State; and to facilitate this, provision should be made for printing return cards so that all the apiarists would have to do would be to fill blanks and mail, this Association doing the rest. In this and connected directly with it should be a sort of information bureau whereby apiarists may be informed of crop and market conditions.

I believe that our State should be well represented at the Trans-Mississippi Exposition at Omaha. Considering the work that we should do at home, and the very low state of the Association's financial condition, I cannot recommend that our funds be applied in that direction. However, I appeal to



Bee-Supply Factory of E. Kretchmer—One of Our Advertisers.

general as citizens have to do with many of the far-reaching influences that have to do with general conditions influencing morals and money, but as members of the Colorado State Bee-Keepers' Association, and as bee-keepers in general, we have duties toward each other in the pursuit. We may be able to concert our action and better pack and market our product, and thereby help ourselves in some points at least until such time as good-will shall prevail among all classes to the good of all.

I desire to point out in specialty some things this Association should do at this time. We have a constitution. Its limitations and regulations have not been properly observed. We must amend our methods or our constitution—both need amending. The constitution requires us to hold this, our annual convention, the third Monday in January, beginning at 10 o'clock a.m. This is too ironclad to best serve our interests. I recommend that this provision be amended giving us more liberty as to time of meeting, and that it be so modified as to be largely in the power of the executive to call meetings.

Besides this, there are other amendments needed in both constitution and by-laws. Sections 4 and 7 of the constitution need amending. Also sections 3, 5 and 13 of the by-laws. I will not here detail these matters, but so soon as you shall be ready to consider the matter I will point out to you what in my estimation is needed, when you can adopt or reject, as seems best.

Should you see fit to adopt amendments that I shall pre-

the apiarists of the State to do what they can in that direction outside of the Association, and should the bee-keepers rally to the support of the Association, we may also do something as an Association. Our State produces both quantity and quality, and we ought to be represented.

I appeal to the apiarists of the State to stand by your Association in both moral and financial support. Your officials are willing to execute for you at a cost of both time and means if you will but give them the proper backing. Stand by this Association, for in helping it you help yourselves. Co-operative organization is just, proper, and to be desired for the good of all.

Defensive organization is a necessity to protect ourselves against common enemies. Do you not know, fellow apiarists and all classes of producers, that a large element of mankind—perhaps I should call them by a less dignified name—are planning, yes, even deliberately plotting, in many cases, to induce or compel you to divide your earnings with them? There are non-producers—many of them—who are abundantly worthy of our support, they are necessary in the social economy, and we sin if we do not duly support them; but the monopolistic and unfair grabbers, and above all the parasites who feed upon honest productions, must be gotten rid of.

Dear friends, let charity prevail. Do a labor of love, so loving the right and hating the wrong, that no wrong-doer can stay among us and continue to do wrong. May our motto be harmonious and persistent action, action, action.

R. C. AIKIN.

The Secretary next read his report, as follows :

THE SECRETARY'S ANNUAL REPORT.

At the last annual meeting your Secretary was instructed to request the publishers of *Gleanings in Bee-Culture* to withdraw the quotations of a certain firm dealing in honey in this city. After considerable correspondence, and even after they were informed of the result of two different analyses, they still preferred to continue their quotations, saying they wanted more analyses made. But as this Association is not in a position to waste any money for this purpose, it was thought best to let the matter rest.

During the last session of the legislature a law had been past to have our report printed with the Horticultural Report. Accordingly I prepared a very complete report of our proceedings, and had the same turned over to the Secretary of the State Board of Horticulture, Mrs. Martha A. Shute, but I have been informed lately that there are no funds available for the printing of the same.

During the past season communications were received from Florida and also from the United States Department of Agriculture for copies of our foul brood law, which were furnished.

As there was a glut in our honey market during the latter part of the summer, I have tried to be of some assistance to my fellow bee-keepers in finding an outlet for this surplus, and have met with fair success.

I have also received communications from the officers of the Trans-Mississippi and International Exposition in Omaha, inviting the Association to make an exhibit at that place.

On account of lack of funds certain lines of work, as the collection of honey statistics, etc., could not be carried out. I hope the past favorable season will revive the interest in Association matters among bee-keepers, and result in a largely increased membership.

FRANK RAUCHFUSS, Sec.

COMMITTEE ON PERMANENT EXHIBITS.

A committee on permanent exhibits, consisting of R. H. Rhodes, J. E. Lyon, H. Rauchfuss, J. B. Adams, and Mrs. M. A. Shute, was appointed, and reported that they had some assurance of having cases furnished to be placed in the Capitol Building.

A letter dated Jan. 11, from Vice-Pres. W. L. Porter, at present in Los Angeles, Calif., was read, which is as follows:

CONDITION OF THE DENVER HONEY MARKET, ETC.

I have been requested to write on the condition of our honey market—its present demand and supply. At the present time the demand for honey in Denver is very slow. Dealers all complain that it is getting very slow. Perhaps this may be on account of Holiday trade, and it may be better soon. The supply seems to be ample. Houses that are dealing in honey say they have ample stock to last through the year. Dealers have told me that in the past week, in order to move honey at all, they were compelled to sell at \$2.00 per case, the same price they paid for the honey.

It is very evident that the demand is too small, or the supply too great, for bee-keepers to secure a living price for the product of their apiaries. Through the joint effort of a few of the leading bee-keepers several carloads of honey have been shipped East, from the Denver markets; and it is evident, if we wish to sustain a fair market, this must be done in the future. As no one bee-keeper produces honey extensively enough to ship alone, co-operation is necessary, and it is to be hoped that the State Association may get in shape to do it for its members. You may depend on my hearty co-operation.

I have been attending the California association. There was a good attendance of wide-awake and energetic bee-keepers. The meeting was a very interesting one. Mr. Cowan was present and gave a talk on bee-keeping in England; the remarks were very instructive. The Association took action on the uniting of the two Unions. The vote was unanimous that the New Union should absorb the Old, and the Old should wind up its business and cease to be. It would seem to me to be wise for our Association to pass a similar resolution. They also past a memorial to Congress to give us a pure food law, and a committee was appointed to draw up a resolution and present the same to the Secretary of Agriculture.

W. L. PORTER.

[Continued next week.]

Every Present Subscriber of the Bee Journal should be an agent for it, and get all others possible to subscribe for it. See offers on page 255.



Delayed Laying.—M. Gillet says, in *Revue Eclectique* that he had a queen not fecundated till 29 days old, commenced laying three days later, laid only drone-eggs for nine days, then worker-eggs.

Making One's Own Supplies.—*Gleanings'* Strawman says: "Doolittle advises a good workman with the necessary tools to make all his needed wares after starting, except sections. Doolittle! I'm a good workman, and I can borrow what tools I lack, but if I can get a job of sprouting potatoes at 10 cents an hour I believe I can save money to buy my hives and other 'fixins'."

Spreading Brood, as usually practiced, by inserting an empty comb in the center, is condemned by H. W. Brice, in the *British Bee Journal*. His plan is to wait till the bees completely cover the frames on which they are clustered, then put, only on one side, an empty comb next to the last frame of brood. In a few days put an empty comb on the other side, but in no case put an empty comb between two frames of brood.

Foundation in Sections.—The report of the Ontario experimental apiary says the results of a very thorough and extensive test made with different amounts of foundation in sections, show that it is important that the sections be filled to sides and bottoms, otherwise there will be more pop-holes and the comb will not be fastened firmly to sides and bottom. Foundation running about 12 feet to the pound was most readily accepted by the bees; when thinner, there was greater tendency to pop-holes and gnawing down.

Plain Sections in Canada.—Editor Holtermann bluntly says, "I think that the plain section is a decided humbug." He says, "We are turning out our new sections this year in one piece, with the top and bottom-bar cut clean away in the corners." At the Ontario Convention J. B. Hall objected to the plain section because of the danger of making the combs bleed in handling. F. A. Gemmill replied that when you take hold of a section with a plain top-bar it's all the same as a plain section, and he thinks a nicer looking section can be produced with a cleated, perforated separator. Editor Holtermann thought it might be practicable to have a bee-space on one side and not on the other, but when it comes to having it on either side he predicts failure.

Stimulative Feeding, or "speculative" feeding, as the Germans call it, is discussed by W. Fitzky, in *Centralblatt*. He cites the opinions of various authorities, who are by no means in entire accord. Gravenhorst says with weaklings it does more harm than good, but judiciously managed by the experienced bee-keeper, it produces profitable results with strong colonies. Kilchling says beginners cannot be warned too earnestly against it, for if bad weather comes, the bees, excited by the feeding, fly out in numbers, and instead of being strengthened, the colony is weakened by means of the bees that are lost. "Blene und ihre Zucht" says, under certain conditions of pasturage, the experienced can use it to advantage. Herr Fitzky adds that stimulative feeding is an art to be learned by practice.

Killing Old Bees in the Fall.—Mr. Alpaugh moves a hive in the fall to a new location, sets a top story on the old stand to catch the returning old bees, then destroys them. He thinks the colony winters better for the depletion. The old bees die in the winter, and he thinks some young bees are lost in dragging them out. J. B. Hall is somewhat of the same mind. He doesn't want any more bees in a hive than will take good care of the queen and be ready to make a good start in spring. Beyond that he thinks they only consume honey. If two colonies are to be united in the fall, he just takes the combs from one and lets the bees die.—*Canadian Bee Journal*. This seems just a little on the line of the practice of—was it Hosmer?—a good many years ago, killing off bees so as to have only a pint or a quart to winter. Quite a bit of talk about it at the time, but no one else seemed to succeed at it, and it was given up. Possibly killing off the old bees is the secret of success.



GEORGE W. YORK, EDITOR.

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UNITED STATES BEE-KEEPERS' UNION

Organized to advance the pursuit of Apiculture; to promote the interests of bee keepers; to protect its members; to prevent the adulteration of honey; and to prosecute the dishonest honey-commission men.

Membership Fee—\$1.00 per Annum.

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GENERAL MANAGER AND TREASURER—Eugene Secor, Forest City, Iowa.

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NOTE.—The American Bee Journal adopts the Orthography of the following Rule, recommended by the joint action of the American Philological Association and the Philological Society of England:—Change "d" or "ed" final to "t" when so pronounced, except when the "e" affects a preceding sound.

"A Journal that is bright, wide-awake, vigorous, up-to-date, and full of ideas that help arouse the reader to better deeds, can be forgiven almost any failing."—Review.

All right, we feel forgiven, for so many of our readers have told us that they consider the American Bee Journal just that kind of a journal. Next.

Bee-Supply Branches.—It is surprising to note how many of the large manufacturers of bee-keepers' supplies have within a few years established branches in various parts of the country. It seems to be growing as a fad with a firm that has their big headquarters somewhere, to have a whole lot of their smaller hindquarters scattered almost everywhere. We believe the practice will not be so very profitable in the long run. Some day there will likely be a gathering together from "all quarters," to the profit of all concerned.

An Unfortunate Bee-Keeper.—We have received the following from Mr. C. P. Dadant, in regard to a bee-keeper and family who are destitute through the recent awful Shawneetown, Ill., flood:

MR. EDITOR:—Your readers have undoubtedly all read about the terrible disaster at Shawneetown. But, like myself, most of them have probably not thought much farther about it, and altho quite willing to lend a helping hand, they have failed to find the opportunity to subscribe to help the sufferers.

It now appears that one of our brother bee-keepers, and a very deserving one, is among the sufferers, and I take the liberty to present the facts to the bee-keeping fraternity.

Mr. Thos. McDonald, of Shawneetown, was accidentally paralyzed in the hip and legs by falling from a building in 1895. He has since been unable to work, being confined to a

wheel chair, and his apiary of 200 colonies, and a few milk cows that he owned, were managed by his wife and daughters. They were, in this way, making a good living in spite of his position and inability to work.

The flood of Sunday evening, which destroyed the entire town, drowning over 100 people, deprived him of all he had. They lost their home, their cows and their bees, saving only their lives. Friend bee-keeper, is this not a case deserving of our help? The bee-keeping fraternity is a sort of free-masonry, an occupation apart from all others. Let us do as other brotherhoods do, help our suffering ones, remembering that our turn may come to suffer. Let no one hold back because he can give but little. It is the little drops of rain that make the mighty rivers.

If Thos. McDonald can get help enough to buy a few bees he can keep out of the poor-house. Bee-keepers, let us hear from you!

C. P. DADANT.

In a private letter Mr. Dadant suggests that the contributions be sent either to us or to Mr. McDonald direct. But we believe it would be better to forward all to Mr. C. P. Dadant, Hamilton, Hancock Co., Ill., who doubtless will be glad to turn over the total amount, and see that it is properly used, as he vouches for Mr. McDonald's worthiness. We forward our own contribution to Mr. Dadant at once, and trust that all who feel able to do so will send now, so that our suffering brother and family may be able to start with bees again in time to do something this season, which is now at hand. All contributors and their amounts will be published in the American Bee Journal later on.

Let as many as can send \$1.00 each. More if you can do so, or less if not able to send so much.

Grading or Sorting Comb Honey.—How often we have been deceived in honey the past year. We have bought lot after lot, that was very beautiful next to the glass, but back of that—well, it was simply fraudulent putting up, that's all. What good excuse can there be for putting well-filled, white and tempting sections of honey in the outside row, and then filling up with partly-filled, half-sealed sections?

We should like to see the practice come into vogue, of the producer putting his name, county and State, on every case of honey shipped to a city market. It would be infinitely to the credit of the ones who were honest in the putting up of their best grades; and the other fellows would suffer by the practice, as they justly deserve.

There ought to be an advance made this year along the line of a more honest grading or sorting of comb honey for market. Dealer and consumer would alike rejoice.

The Langstroth Monument Fund.—Mr. E. S. Lovesy, President of the Utah Bee-Keepers' Association, sends us the following suggestions on the proposed monument to be erected to the memory of Father Langstroth:

FRIEND YORK:—I have received information that a proposition has been made to erect a Langstroth monument at a cost of about \$75. As a bee-keeper I do most emphatically protest. Shame upon us, if 100,000 or more bee-keepers in the United States cannot do better than this in honor of our beloved friend—the greatest of all American bee-keepers. The trouble is not a lack of generosity on the part of our bee-keepers, but a careless indifference or lack of interest in the matter. We can and must do better. Then let us be up and at it, till the noble work is done.

I move that a committee of five or more bee-keepers be appointed by the officers of the United States and National Bee-Keepers' Unions, to find out where the best and most substantial monument can be had at a cost of about \$500; said committee to also receive inscriptions and select one from among those received to be placed on the monument; and that they also be authorized to agitate the matter until the work is completed in a manner that our bee-keepers will not be ashamed to visit the last resting-place of our long-to-be-remembered friend, L. L. Langstroth. E. S. LOVESY.

No doubt many said while they were reading the foregoing, "Why, I'll second that motion." We believe that \$1,000

could be raised as easily as \$500, if the matter were pushed by a competent committee.

In order to get it started, we will suggest what we think would be an excellent committee, to be known as "The Langstroth Monument Committee:"

Hon. Eugene Secor, Forest City, Iowa, General Manager of the United States Bee-Keepers' Union, chairman.

Thomas G. Newman, San Francisco, Calif., General Manager of the National Bee-Keepers' Union.

Dr. C. C. Miller, Marengo, Ill.

G. M. Doolittle, Borodino, N. Y.

Mrs. L. Harrison, Peoria, Ill.

Now, why isn't that a fine committee? In it are represented the two Unions, and three of the oldest and best writers on apiculture, one of them to represent the "dear women" bee-keepers. What more do you want?

If this committee shall be the one selected to undertake the work, and provided they accept, we suggest that they at once issue an address to bee-keepers, to be published in all the bee-papers, and that hereafter contributors be requested to forward all moneys to them. Contributions can be sent to any one of the five members, and all be forwarded finally to Chairman Secor, who would be authorized to pay it out when the monument is selected, placed in position, and the work approved.

We believe The A. I. Root Co. have in hand about \$75 that has been contributed toward to Monument Fund, and we have \$10 lately sent to us. If the matter were taken up at once and urged as it deserves, we think that by Oct. 1, 1898, the desired amount could be raised and the monument erected this year.

Provided this matter is taken hold of and worked as it ought to be, our own further contribution of \$5 will be made.

Produce Only the Best Honey.—High aims are always to be encouraged everywhere. Why not in the production of honey, and especially that in the comb? It is our opinion that too much of the inferior grades are put upon the markets, and particularly city markets. We have been greatly surprised at some—yes, a good deal—of the comb honey we have seen in the Chicago market the past year. We truly believe there was but a small percentage that was really fancy honey.

Now it seems to us that with the experience of added years, and with all the present-day improvements in bee-keeping appliances, better-appearing honey ought to result. Bee-keepers should not be satisfied to place before consumers, year after year, inferior looking honey, ragged-edged, and with corduroyed sides, but our aim should be to produce as even and squarely-built sections of honey as we possibly can, trying to improve as the years come and go. We ought to make the effort, at least.

Honey for Burns.—A 4-year old boy was badly scalded, and in despair his parents had recourse to the old domestic remedy—honey. Six pounds of honey were dissolved in warm water, with which the parts were several times bathed. The pain departed at once, and the boy rapidly recovered. This is reported in a German paper. It does not seem to make much difference whether you put honey on the inside or the outside of a person, it is alike beneficial.

Bee-Keeping for Beginners is the title of a 110-page book just out, from the pen of that expert bee-keeper of the South, Dr. J. P. H. Brown, of Georgia. It claims to be "a practical and condensed treatise on the honey-bee, giving the best modes of management in order to secure the most profit." Price of the book, postpaid, 50 cents. Or, we will club it with the Bee Journal for one year—both together for \$1.40; or, we will mail it as a premium to any of our present subscribers for sending us one new subscriber to the Bee Journal for a year (at \$1.00), and 10 cents extra.

QUESTIONS AND ANSWERS

CONDUCTED BY

DR. C. C. MILLER, MARENGO, ILL.

(Questions may be mailed to the Bee Journal, or to Dr. Miller direct.)

Unpainted vs. Painted Hives.

What do you think of unpainted vs. painted hives, as stated by Mr. Doolittle?

ANSWER.—Mr. Doolittle says he wouldn't allow his hive-bodies to be painted if any one would give him a dollar a piece for it, for it would make a difference of \$2.00 each in the development of brood in spring. I don't know how exact those figures may be, but I've so much faith in the general principle that I haven't painted a hive for many years, except to paint the covers.

Foul-Brood Treatment.

1. My bees are troubled with foul-brood, and I got Dr. Howard's pamphlet with McEvoy's foul-brood treatment. Is his treatment the best to cure foul-brood, and is it as good or better than the starving plan?

2. Also, could I use the honey that was in the hive where there was foul-brood, to feed the bees, if I boil it well? N. JERSEY.

ANSWERS.—1. You can probably do nothing better than to follow the plan mentioned, which is practically the same as the starving plan, as it uses up all the infected honey before any can be fed to brood.

2. Yes, only such honey will not be fit for winter.

Crimson Clover as a Honey-Yielder.

We have been having ideal spring weather for about a week now, and the bees are working like trojans. They are about a month ahead of what they were last year, and if the weather does not take a change for the worse, I will have honey in the sections within a week, which is something unusual for this section. I would like to know the honey-producing quality of crimson (not red) clover, as compared with white clover. There is about 100 acres of it on all sides of me, and if it yields much nectar, I should have a good crop of honey. There is also a good lot of white clover in my vicinity; saw the first blossoms on it yesterday (March 18.) I have a good stand of sweet clover, planted as an experiment, and will report later how it turns out. Please advise me as to the crimson clover as early as possible. I might mention that the bees work on it very freely. GEORGIA.

ANSWER.—You are the very man to give something definite about crimson clover, and it is to be hoped that you will keep your eyes wide open to tell us all about it as soon as it gets through its principal blooming. Reports so far say it is a great yielder, and there can hardly be any doubt on that score in the mind of any one who has seen the bees at work on it. I do not know whether any one as yet has had so large a quantity of it in one place as to be able to say exactly as to the quality, the supposition being that it is excellent, and on this point you ought to be able to enlighten us. As it comes earlier than the other clovers, with 100 acres you probably ought to be able to have it unmixed with other honey. Be sure to report.

Question on Transferring.

I am a beginner, having only had bees last summer, and getting out of health during the honey-flow and ever since, I have not done them the justice that I might. I got 24 old hives with bees, and some empty in addition, increased to over 40, commencing the winter with 30, which are good now; one was short of "funds," so I today exchanged two empty for two full combs, with another.

1. What I want to know is, your opinion of the best way to change the bees from seven or eight hives of odd patterns, in which the frames are locked and crooked. I wish to get them into standard eight or ten-frame dovetailed hives. I have seen several methods described, and I am not satisfied with any given in books or papers. Could I not set the hives (old and new) one on the other, and drive the bees into the fresh hive until I knew the queen was in the upper new story, then put a queen-excluding zinc between them, and in a few days make the entrance at the upper story and close the lower, and by thus doing induce them to leave the old hive nearly empty of everything but old comb, and make one excessively strong colony? Or, would the bees insist on filling the comb in the old hive full of honey as the brood hatch out? If they would not fill the old story tight full, the combs could be cut out and melted down with little trouble. I judge they would when treated thus, cut out any queen-cells there were in the old story when the new one was added and the queen sent upstairs. If they would not do so, the simplest way, of course, to avoid trouble and

get good results, is to make a "drive," and put the new hive on the old stand, and turn the other and shift it a few times; but that will not turn all the bees into the new hive, so the process will have to be repeated, and if I repeated it after the new queen was hatched, I think the swarm would be too poor to do any good.

2. If they turn to queen-rearing and swarm, which hive would you leave on the old stand, and which will give the best returns in comb honey?

COLORADO.

ANSWERS.—1. Your plan might work and it might not. In several instances I have put an excluder over the hive with brood, having the queen in the empty story above, and they suited a long while—in one case the queen just wouldn't lay at all, altho kept there for weeks. If you put a frame of brood from some other hive in the upper story, you may make the queen lay all right. There is danger that the bees will fill the combs below with honey, but you can help the matter by closing the lower entrance. Then you can gradually increase the opening between the two hives, say after about a week, and when the opening becomes too large to suit the bees, they'll not be likely to want to store anything below, but you must be sure they have abundance of room above. They'll not be very likely to start queen-cells below.

2. Leave the new hive on the old stand and you'll probably get more comb honey, for if you leave the old hive there, they'll be likely to swarm again.

Managing Swarms.

I will tell you how I would like to manage my bees (all that will swarm) and see what you think of it. That is, when a swarm comes out I intend to kill the queen (all clipped) and have the bees come back again to stay. Is this a good way, or not, for comb honey? If so, at what date would you cut queen-cells? In this way of managing, say a queen is extra prolific, I would cage her instead of pinching her head off. Where is it best to keep the caged queen in the hive, and how long?

PENN.

ANSWER.—Your plan is a good one if. And a good deal hangs on that if. If you cut out all cells but one before the first one hatches out, and if you miss no cells, and if you select the best one of the lot, and if there is no brood in the hive young enough to be grown into something in the semblance of a queen, you're all right. Perhaps seven days after the issue of the swarm will hit the first and the last conditions, and you'll have to run the risk of leaving the best cell and not missing any. Possibly it might be still better to listen at night for the first piping, which may be in seven or eight days, then in the morning before the bees have time to swarm, cut out all queen-cells. That's safer than to make your choice of cells, so far as the quality of the queen is concerned, and you are not likely at that time to have any unsealed brood. The chief danger is that you may miss a cell.

At that time of year you can keep a caged queen almost anywhere where the bees can get to her to feed her. A handy place is to stick her in the entrance of the hive. She may be kept caged for weeks, but after being caged too long she may not be worth much. Perhaps caging a week or two will not hurt her.

Best Size of Hive—Spacing Frames—Best Section and Separator.

1. What size of hives do you consider best, and which is the best brood-frame?

2. How would you space the brood-frames so as to make them self-spacing? Would you advise closed-end frames, or would you space them with small staples put into the end-bars? If the latter, where should the staples be put?

3. What is the best honey-section to use, and best separator, the fence, board or tin?

WISCONSIN.

ANSWERS.—1. It's a very difficult thing to say what size of hive is best. For one who expects to give much attention to his bees, I'm inclined to favor 8-frame hives, as they can be increased anywhere up to 16 frames by having two stories. If little attention is to be given to the bees, probably a 10 or 12 frame hive is better, for there's more danger that with the 8-frame hive the bees would be left in one story with not enough stores for winter. It isn't any where nearly so important to have hives of the same kind as it is to have only one size of frames. You can have 8-frame, 10-frame and 12-frame hives in the same apiary, and find little trouble from it, and you may have different kinds of frames, but when you have different sizes of frames, then the trouble begins. The nearest of anything to a standard frame is 17½ long and 9½ inches deep, outside measure. I had frames by the thousand that were ¾-inch shorter and ¾-inch shallower, and the difference doesn't amount to anything only that it isn't the standard size, and as fast as I get new frames they are the standard size.

2. I believe closed-end frames are best for the bees, because warmer; but they are troublesome about killing bees, and about being glued together. For spacing, staples are good, and yet I prefer a common wire-nail with a head about 3-16 inch across, the nail being driven in all but ¼ inch. That spaces the frames 1½ inches from center to center, top-bars and end-bars as well as bottom-bars being 1½ inches wide. Staples or nails can be driven in the top-bar near the end-bar, and in the end-bar perhaps 2½ inches from the lower end. Only four spacers are needed on a frame, two on one side at one end, and two on the other side at the other end. When you hold up a frame before you, there are no spacers at the right hand end on the side next you, but on the side away from

you, at the left end, the spacers are on the near side. An objection to nails for spacers, and even to the frames I have described, is that they are not regular goods, and have to be made specially to order. But if you start with a frame of the right size, it isn't such a hard matter to change the kind any time.

3. The standard section at present is the 4¼x4¼x1½ with insets cut for bee-passages, to be used with plain separators—wood separators if they are to be used loose as in the T super—tin if to be nailed fast as in wide-frames or section-holders. The plain section and fence are now on trial, and only that trial will determine whether they should be adopted exclusively or not.

Making Increase by Division.

Of 14 colonies, three died during winter. How would this do, to get three built up to take their places? About May 1 (or would it be safe sooner) if we have an early spring, take a well-populated colony and divide, leaving the queen and two frames in the old hive; of the balance of the frames in this hive (six in number), put two each in three hives, with adhering bees; at the end of ten days cut all queen-cells and introduce queens. I want to get some new blood in, anyway, and would get queens from outside. Of the old combs left by the dead colonies, I have 18, fairly well-filled with honey, to give to the nuclei, as they need it. What would you do different from above?

OMAHA.

ANSWER.—Sorry to disagree, but I just wouldn't do anything of the kind. Let me explain a little, and then I'll be obliging enough to let you do as you please. It's the number of bees that count in a honey harvest rather than the number of colonies. When the honey harvest comes, I'd rather have an apiary containing 300,000 bees than one containing 400,000, if the 300,000 are in five colonies and the 400,000 in twenty. That's a proposition by itself. Here's another: If you make four colonies out of one May 1, the probability is that three weeks later you'll not have as many bees in the four colonies as you would have had in the one, if you had left it undisturbed. Until the queen gets up to about her limit of laying, it will be a losing game to divide. For 40,000 can take care of more brood in one hive than they can in two, and so long as the queen can lay more eggs than they can care for, what would you gain by dividing? So I believe I'd rather wait till the queens got to about their limit of laying—perhaps about swarming-time—then take a frame of brood and bees from each hive, making three fairly good colonies at the start, and not materially depleting any one of the 11.

Raising Hives from the Bottom-Board—Zinc Separators—Corn Syrup for Stimulative Feeding—Making Wax Sheets—Introducing Foul Brood with Queens.

1. I read so much about raising hives from the bottom-boards by means of blocks under the corners for ventilation and to discourage swarming. Is there no danger of robbers by having so much opening? and are there not a great many bees lost when the blocks are taken out, as the bees have been accustomed to enter from the sides and rear of the hive?

2. How would separators made of queen-excluding zinc do? They would be nicer and more durable than the fence-separator, and would take up less room.

3. I can buy nice, clear, almost tasteless corn syrup for 19 cents per gallon. How would that be for spring stimulative feeding, by adding part sugar or honey?

4. Is there any other method by which I can make wax sheets for foundation, than by using dipping-boards?

5. Is there any danger of introducing foul brood by sending for queens from any of the advertisers in the Bee Journal? I am wintering 42 colonies in the cellar; so far they seem to be all right, and I am anxiously awaiting spring when I can give them their liberty, for I love to see them at their work and hear their merry hum. I am very fond of reading the Bee Journal, and all bee-literature, of which I have stacks.

WISCONSIN.

ANSWERS.—1. The hives are not raised till colonies are very strong, and I never knew of any trouble from robbers on account of the blocks. Theoretically I should be more afraid of bees being troubled to find the entrance when the hive is let down, but practically I've had no trouble. It isn't far, at most, to the front entrance, the call is there, and it's nearer than to any other hive. Besides, you may have noticed that wherever bees start to use the entrance at the beginning of the season, that's the part they'll continue to use, even when other entrances are given. By the time the hive is raised, the bees have established the habit of using the front.

2. They wouldn't be bad, but rather expensive, and colder than wood.

3. Some years ago it was tried, but I think it was finally condemned by all.

4. Perhaps none practicable, unless it be something like the Weed process, which is patented.

5. No honest man would advertise queens whose bees had foul brood, and I'm sure the Bee Journal would not knowingly accept such an advertisement, but of course there's no way by which it can be absolutely certain of all its advertisers.

Sweet Clover

And Several Other Clover Seeds.

We have made arrangements so that we can furnish seed of several of the Clovers by freight or express, at the following prices, cash with order:

	5lb	10lb	25lb	50lb
Sweet Clover (white).....	.60	\$1.00	\$2.25	\$4.00
Alsike Clover.....	.70	1.25	3.00	5.75
White Clover.....	.80	1.40	3.00	5.00
Alfalfa Clover.....	.60	1.00	2.25	4.00
Crimson Clover.....	.55	.90	2.00	3.50

Prices subject to market changes.

Add 25 cents to your order, for cartage, if wanted by freight.

Your orders are solicited.

GEORGE W. YORK & Co.
CHICAGO, ILL.

Southern Home of the Honey-Bee

Is now ready for your orders for QUEENS of either 3 or 5 Banded Italians and Steel Gray Carniolans. More than 300 Tested Queens to begin with. Untested, either race, 75 cts. each; June and until October 50 cents each. Tested \$1.00 each. Good Breeders, \$2 each. Straight 5-Banded or "Faultless" Queens, \$5.00 each. Satisfaction guaranteed.

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Successor to Hufstедler Bros.,

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Muth's HONEY-EXTRACTOR Square Glass Jars.

Root's Goods at Root's Prices.

BEE-KEEPERS' SUPPLIES in general, etc etc, Send for our new catalog.
Practical Hints will be mailed for 10c. in stamps. Apply to—

Chas. F. Muth & Son, Cincinnati, Ohio.
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OUR PRICES are worth looking at. We are making the new

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with dovetailed body and supers, and a full line of other Supplies, and we are selling them CHEAP. A postal sent for a price-list may save you \$\$\$\$

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IF YOU WANT THE BEE-BOOK

That covers the whole Apicultural Field more completely than any other published, send \$1.25 to Prof. A. J. Cook, Claremont, Calif., for his

Bee-Keeper's Guide.

Liberal Discounts to the Trade.

PATENT WIRED COMB FOUNDATION

Has No Sag in Brood-Frames

Thin Flat-Bottom Foundation

Has No Fishbone in the Surplus Honey.

Being the cleanest is usually worked the quickest of any Foundation made

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Sole Manufacturer,
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BEE-KEEPERS! Let me send you my 64-page Catalog for 1898

J. M. Jenkins, Wetumpka, Ala.

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GENERAL ITEMS

Bees at Work.

Bees were working lively yesterday and to-day on the box-elders. Peaches, pears and plums are just opening their bloom.

D. C. McLEOD.
Christian Co., Ill., April 11.

Wintered in Good Condition.

My bees came out of winter quarters in good condition. The weather is cold and backward.

W. A. SAUL.
Crawford Co., Iowa, April 7.

Bees in Fine Condition.

We are having good weather now. The snow is off the fields around here, but it is raining to-day. My bees are in the cellar now, and in fine condition.

GEORGE H. PORTER.
Hamilton Co., N. Y., March 14.

Cold Weather in Kentucky.

We have been having some very cold weather the past two weeks. The mercury has been as low as 29—something unusual for old Kentucky. It has been hard on the bees. But it has the appearance of better weather now.

W. S. FEEBACK.
Nicholas Co., Ky., April 12.

Midwinter—Not Midnight.

Please correct a typographical error that crept into my previous article on page 194, second column, the seventh line from the bottom, where your typo makes me say: "I once had a half-barrel of cappings which had been neglected till midnight. Did I write 'midnight' or 'midwinter'?" I am perfectly willing that you should give your readers the impression that I am fond of working, whether it is true or not, but don't let them think that I work till "midnight" without absolute, urgent necessity.

Hancock Co., Ill. C. P. DADANT.

[Yes, you are right, as usual. It must be our compositor had been out until midnight the night before putting your article in type. We have been quite ready to give you all credit for being industrious, but would hardly go so far as to think you would work until midnight in rendering wax.—EDITOR.]

A Soldier Bee-Keeper's Story.

It is not necessary for me to say that I appreciate the American Bee Journal—my subscription money tells that. I am an old soldier, and have handled bees more or less all my life, but I had never gotten right down to business until within the last three years. I started with one colony, bought eight more, and now have 70, all in good condition.

While I was a soldier in camp near Nashville, Tenn., I was nearly dead with camp diarrhea. December 25, 1862, we were ordered to move on the enemy at Stoney River. My captain carried my knapsack, and I trudged along and made out to keep in sight of the regiment. That evening, about dark, we went in camp near a residence of a rich old planter on a nice clover pasture. After stacking arms, I took a camp kettle and started down through a cotton patch for water. I had not gone far when I discovered some soldiers a little way from me. It was so dark I could not tell what they were doing, so I paused a moment to see if I could learn what they were at. Soon I heard a voice, "Do they sting?" This aroused my love for honey, and I went to them and found they had three old-fashioned round log hives, the heads knocked off, and the bees holding the party at bay. I asked the privilege to join them, and they



\$100

Given as Bounties to purchasers of the improved Danz. Hives and Sections. See schedule in my bee-book "Facts About Bees." Tells

how to produce honey that sells for the most money. Free for 2c in stamps. Address

THE A. I. ROOT CO., Medina, Ohio.
or F. DANZENBAKER, Box 466, Washington, D. C.

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Excelsior Incubator and Brooder Cheap

200 eggs capacity. Good as new. Used for only two hatches. Everything complete. Will sell it for TWENTY DOLLARS, half the cost price. Address, P. W. DUNNE, River Forest, Cook Co., Ill.

Texas Queens

Best honey-gathering strain in America. Tested, \$1.50. Untested, \$1.00. Write for a Circular. J. D. GIVENS, Lisbon, Tex.

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Simple, Perfect, Self-Regulating. Thousands in successful operation. Lowest priced first-class hatcher made. G. E. H. STAHL, 114 to 122 S. 6th St. Quincy, Ill.

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Send for Catalog.

FRED A. DALTON,
1A26t WALKER, Vernon Co., Mo.
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C. B. BANKSTON

Is Rearing Queens in Cameron Texas.

And requests bee-keepers in the United States to write him with an order for a **GOLDEN QUEEN**—Untested, 50c; Tested, 75c. We breed the 3 and 5-banded Italians, and Silver Gray Carniolans.

Safe Arrival Guaranteed.

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SEE THAT WINK!

Bee-Supplies! Root's Goods at Root's Prices.

Powder's Honey-Jars, and every thing used by bee-keepers. Prompt service, low freight rate. Cat-free. **Walter S. Powder,** 512 Mass. Ave., INDIANAPOLIS, INDIANA.

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Queens, Bees and Bee-Keepers' Supplies

Tested Queens in April and May, \$1.00. Untested, 75c. Choice Breeders, either three or five-banded Italians, at \$2.00. Choice Imported Breeders, \$5.00. Satisfaction guaranteed. Send for Price-List to

F. A. CROWELL,

8Atf GRANGER, MINN.
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All elevated trains on the loop now stop at Nickel Plate Depot, Van Buren St. Station. Call up City Ticket Office, telephone Main 3389, for lowest rates to all points East. (7)

told me to help myself. I took from my pocket a long dirk-knife, and soon filled my kettle with nice poplar honey, and assisted them in getting what they wanted, as I soon learnt they were not accustomed to handling bees. When I returned to the camp-fire my orderly sargent had gone to the house to see if he could get a warm loaf of bread. I took our canteens and went for water, leaving my kettle of honey at the camp-fire. When I returned the orderly had gotten back and reported that a corn-meal pone of bread was under way, and as he returned past the barn he said a great big fat hen tried to peck him, so he arrested her. We gave the hen a trial, and decided she was guilty, and we broke her neck. You never saw as happy a set of soldiers in your life, as we were that night, sitting around our cracker pot-pie, kettle of honey, and our pone of corn-bread. To tell the truth, I entirely forgot that I was nearly dead with camp diarrhea, and I have not had it since. The honey, fat hen, and corn-bread made a final cure. I can recommend this prescription, for I carried my knapsack after that, went through the battle at Stoney River, lay on the cold ground, waded Stoney River to my arm pits several times, and underwent the privations common to war, and have never had the camp diarrhea since.

Pardon me for this lengthy army story—my object was to give honey what it merits as a medicine as well as food.

Kittitas Co., Wash. S. W. MAXEY.

Early Spring—Fair Prospects.

I have 15 colonies wintered on the summer stands. All are in good condition, and are bringing in loads of pollen, gathered from the soft maple. Indications are that we will have an early spring. Prospects are fair for a honey crop this year.

ALBERT ZIEGLER.

Huntington Co., Ind., March 21.

Wintered Well.

My bees wintered well, and have plenty of hatching brood at the present time. I enjoy reading the American Bee Journal.

W. READ CHAMBERLIN.

Johnson Co., Iowa, March 24.

Good Season Expected.

I wintered 40 colonies, and they seem to come out all right. I had them in the cellar. Last season was a poor one here for honey, but I think we are going to have a good season here this year. We have plenty of basswood, but for some reason or other we have not had any honey from it for three years. The best I have done is 127 pounds of honey from a colony, and the poorest—well, down to nothing. Success to the "Old Reliable."

G. JOHNSON.

Clark Co., Wis., March 25.

"Divider" in Producing Comb Honey.

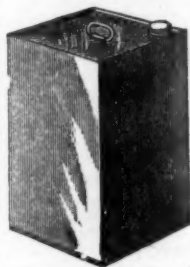
I will try to answer Wm. Golden's article on page 187. He says: "After quoting what he says in his article on page 51." I confess I cannot answer that; I don't understand it. Then follows a quotation that is garbled, and the meaning destroyed. I will not give it here, but ask Mr. Golden to kindly compare it with the original, on page 51.

Mr. G. asks: "Why is it that the bees must be compelled to enter thives?" Answer: Simply because the divider affords two bee-spaces, and if the bees are allowed to go outside the follower, if one be used to fill up space, then there will be three bee-spaces—one too many, you see.

I may say right here, that I have on a large scale tested two, three, and even four bee-spaces at the sides of the section-supers, to my own conviction that while two, properly provided are of great advantage, any more than two tend to harm. And that is my reason for giving the caution with emphasis.

Mr. Golden's next question—"I have thought a good deal about it, and can hardly

Only 6 cts. per Pound in 4 Can Lots or Over.



Finest Alfalfa Honey!

IT SELLS ON TASTING.

The Honey that Suits All Who Buy It.

We can furnish **White Alfalfa Extracted Honey**, in 60-pound tin cans, on board cars in Chicago, at these prices: 1 can, in a case, 7 cents per pound; 2 cans in one case, 6½ cents; 4 cans (2 cases) or more, 6 cents. The Cash **MUST** accompany each order.

A sample of the honey will be mailed to an intending purchaser, for 8 cents, to cover postage, packing, etc. We guarantee purity.

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Mr. Abbott sells our Hives and Sections at factory prices.



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Bingham & Hetherington
Un-capping-
Knife.

PRICES OF BINGHAM PERFECT

Bee-Smokers and Honey-Knives!

Smoke Engine (largest smoker made)	4-in. stove.	Doz. \$13.00; each, by mail, \$1.50
Doctor	3¼ in. stove.	Doz. 8.00; " 1.10
Conqueror	3-in. stove.	Doz. 6.50; " 1.00
Large	2½ in. stove.	Doz. 5.00; " .90
Plain	2-in. stove.	Doz. 4.75; " .70
Little Wonder (weight 10 ounces)	2-in. stove.	Doz. 4.50; " .60
Honey-Knife		Doz. 6.00; " .80

Bingham Smokers have all the new improvements. Before buying a Smoker or Knife, look up its record and pedigree.

FIFTEEN YEARS FOR A DOLLAR; ONE-HALF CENT FOR A MONTH.

Dear Sir:—Have used the Conqueror 15 years. I was always pleased with its workings, but thinking I would need a new one this summer, I write for a circular. I do not think the 4-inch Smoke Engine too large.

January 27, 1897. Truly, W. H. HAGERTY, Cuba, Kansas.

Mr. Bingham, Dear Sir:—Please send per mail a 4-inch Smoke Engine. I have one of your Smokers; it is too small in time of trouble.

February 21, 1898. A. F. SEWARD, Riverside, Calif.

9A9t T. F. BINGHAM, Farwell, Michigan.

Page & Lyon Mfg. Co. New London, Wisconsin,

Operates two sawmills that cut, annually, eight million feet of lumber, thus securing the best lumber at the lowest price for the manufacture of

Bee-Keepers' Supplies.

They have also one **One of the Largest Factories** and the latest and most-improved machinery for the manufacture of

Bee-Hives, Sections, Etc.,

that there is in the State. The material is cut from patterns, by machinery, and is absolutely accurate. For Sections, the **clearest and whitest Basswood** is used, and they are polished on both sides. Nearness to Pine and Basswood forests, and possession of mills and factory equip't with best machinery, all combine to enable this firm to furnish the

Best Goods at the Lowest Prices.

Send for Circular and see the Prices on a Full Line of Supplies.

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7A1f

DR. PEIRO,

CENTRAL MUSIC HALL, CHICAGO.

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COMB FOUNDATION Wholesale and Retail.**Working Wax Into Foundation for CASH A Specialty.**

Hives, Sections, and a full line of Supplies. The best of everything. Write for Catalog, with prices, and samples of Foundation and Sections.

BEESWAX always wanted for cash or trade.

GUS DITTMER,
AUGUSTA, WIS.**ONE MAN WITH THE UNION COMBINATION SAW**

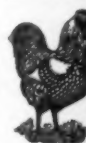
Can do the work of four men using hand tools. In Rippling, Cutting-off, Mitring, Rabbeting, Grooving, Gaining, Dadoing, Edging-up, Jointing Stuff, etc. Full Line of Foot and Hand Power Machinery. Sold on Trial. Catalogue Free.

SENECA FALLS MFG. CO.,
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We have a limited number of barrels of very best Basswood Extracted Honey, weighing NET about 280 lbs. which we are offering at 6 cents per lb. f. o. b. Chicago. Do you want a barrel or so of it? If so, address, with the cash,

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44A26t Please mention the Bee Journal.

QUEENS Untested, after April 1, \$1; Tested \$1.50; Select Tested, \$2. Imported queens, direct from Italy, \$5 each. The best of stock, either Golden or Leather Colored. Write for price-list. **HUFFINE & DAVIS,** 11A4t Ooltewah, Tenn.

Please mention Bee Journal when writing.

Catalog Free A. I. Root & Co's Goods for Missouri and other points, to be had at factory prices from **John Nebel & Son, High Hill, Missouri.** 9A4t Please mention Bee Journal when writing.**Cash PAID FOR Beeswax**

For all the Good, Pure Yellow Beeswax delivered to our office till further notice, we will pay 26 cents per pound, CASH. No commission. Now if you want cash, promptly, for your Beeswax, send it on at once. Impure wax not taken at any price. Address as follows, very plainly,

GEO. W. YORK & CO.
118 Michigan st., CHICAGO, ILL.

tell why... I like to have bee-space between the divider and the super wall," is also garbled. He stops short and doesn't give half the sentence. Why did he not give the whole sentence? He has entirely destroyed the purport of what I said, and then starts out with renewed vigor to kick me for the changed meaning that the garbling has put upon it. Will he please turn to page 51 and compare the original with his garbled statements?

Then he goes on to "suspect" that I have been appropriating some of his valuable thoughts on producing comb honey. No, no; I don't think I ever read one of Mr. Golden's articles to the end, except the one in question, and had my name not been in it, very likely it would have been neglected also. It may be a great lack of appreciation on my part. S. T. PETTIT.
Ontario, Canada.

Bee-Keeping in Virginia—Robbing.

Last year I had some early swarms. I put them out in the country to look out for themselves; so sure was I that they were all right that I sealed them up and left them. Then I went around the country and bought up all the bees I could, along through August and September, and some as late as October, and transferred them to frame hives, taking all of the honey from them and fed them sugar. I also formed, and to save some queens, I put them in hives of 3 frames, with about a pint of bees, and fed them sugar. They came through all right except those in the country that had their own way, and so far I have lost half of them, so I will bet every time on sugar.

I have something I wish to give to the bee-keepers for them to study over, and see what they think of it—something I tried when bees began to rob. I put a skylight in the top of the hive, which doesn't seem to be noticed by the bees of that hive, but the robbers will fly to the skylight and try to get out that way, until they break down, then make themselves at home and remain there. What do you think of it?

I have 18 colonies to start with this spring.

I find I have a hard time in filling orders for my honey, because the people say they know my honey to be honey, and what they buy from the store they don't know about. W. S. SMITH.
Henrico Co., Va., March 16.

A Promising Boy Bee-Keeper.

I received the Bee Journal and I was glad to get it, tho papa reads it first.

Two years ago papa said if I would plow corn good he would get me a swarm of bees, as I had been wanting them for a long time. Well, I did my best and got my bees of Mr. George Reed. They came out in a large swarm on the Fourth of July, and Mr. Reed put them in a hive with a strip of foundation. So we went after them as soon as they had their comb built. Papa said they were patriotic bees, for they came out in the form of a swarm to celebrate.

When winter came we made a big crate with eight inches all around, and filled it up with prairie hay, and the bees were so warm that they reared brood all winter, and came out very strong in the spring.

Mr. Reed came up one day in May and said: "Goodness! that colony is going to swarm yet, for if they don't they can't all get in the hive." And sure enough they did.

I was out playing with my sister when I heard a big roar, and I looked out and saw the air just full of bees. I shouted to my mother, but she did not believe bees would swarm in May. They went back into the hive, and we got a new one down town. They came again and went back, and papa thinks the queen was too old and weak to fly.

Papa was disgusted with this kind of work, and said he would put a stop to it. He put on a bee-veil and some gloves and went into them. He put four frames with queen-cells on them in the old hive, and the four he took out of the new hive in the

If you want the BEST... Honey Extractor

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VAN ALLEN & WILLIAMS,
108tf Barnum, Wisconsin.

Please mention Bee Journal when writing.

SEND FOR IT. My New Queen-Rearing

Book on "Queen-Rearing" will be ready April 1. "Queen-Rearing" is brought down to 1898. It will tell you how to rear Queens in a brood-chamber while the queen has the freedom of the combs. Price, by mail, 25 cents. Address,

HENRY ALLEY, Wenham, Mass.
14E2t Please mention the Bee Journal.**BEEES FOR SALE.**

About 90 Colonies of Italians. Any one wanting to start an apiary cannot do better than to call on Dr. E. Gallup, Santa Ana, Calif., and examine the Bees before purchasing elsewhere. Double sets of Combs in Langstroth-Simplicity Hives, and warranted a superior lot of Bees for business. Correspondence solicited. **Dr. E. GALLUP,**
SANTA ANA, Orange Co., CAL.

**Queen-Clipping Device Free**

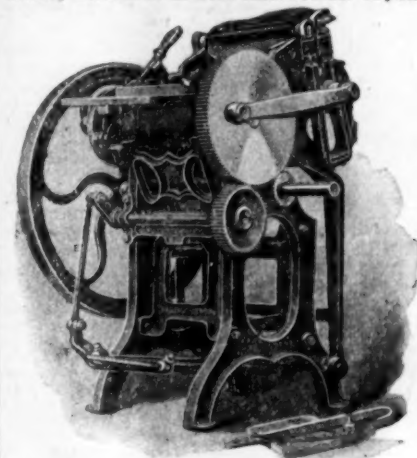
The Monette Queen-Clipping device is a fine thing for use in catching and clipping queens' wings. We mail it for 30 cents; or will send it FREE as a premium for sending us ONE NEW subscriber to the Bee Journal for a year at \$1.00; or for \$1.10 we will mail the Bee Journal one year and the Clipping Device.

GEORGE W. YORK & CO.,
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For Sale Cheap 90 colonies of Bees in lots to suit; in prime condition. For particulars address, **W. SPENCER, Bunker Hill, Ill. Box 114.** 14A4t

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want Envelopes or Letter-Heads, send 2-cent stamp for samples and prices. We will make right prices for neat, good work. All orders can be filled by express, at small charge, as the weight would not be great.

GEORGE W. YORK & CO.,
CHICAGO, ILLS.



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Working Wax into Founda-
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of August Weiss!

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competition
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Foundation**

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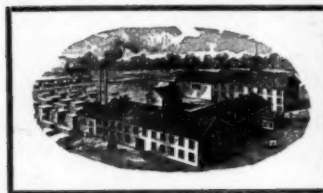
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Save freight and get orders filled at once. Also as fine a strain of 3 and 4-banded Italian Bees as ever gathered honey.
Full 8-frame colonies, \$6.00; 3-frame nucleus, \$2.75.

14Etff

These Include Guaranteed Italian Queens.



8E13t

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Supplies at Bottom Prices.**

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BEES! Florida Italian QUEENS!

Tested Queens, \$1.00 each; Untested, 50c.
2-Frame Nucleus of Bees with good Queen \$2.
Prompt and satisfactory dealing.

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GOLDEN BEAUTIES...

Three-band Italian Queens reared from Root's stock. Golden Queens, from the best selected stock, Untested, 50 cents; Tested, 75 cents. Carniolan Queens at same price.

E. Y. TERRAL & CO.,
Cameron, Texas.

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Bee-Keepers' Photograph.—We have now on hand a limited number of excellent photographs of prominent bee-keepers—a number of pictures on one card. The likeness of 49 of them are shown on one of the photographs, and 121 on the other. We will send them, postpaid, for 30 cts. a card, mailing from the 121 kind first; then after they are all gone, we will send the 49 kind. So those who order first will get the most "faces" for their money. Send orders to the Bee Journal office.



colored transparent Foundation, Improved Smokers and Honey Extractors, and all other first-class goods, are what we sell. Kind and courteous treatment and honorable dealing our motto. On these bases, we solicit an order, feeling sure that if we sell you one bill of goods you will be our customer in the future.

PROGRESSIVE BEE-KEEPER, 50c per year. "Amateur Bee-Keeper," 25c. Both for 65c., postpaid. Sample copy of the **PROGRESSIVE** free, and a beautiful Catalog for the asking.

Address, **Leahy Manufacturing Company,** Higginsville, Mo., or
1730 South 13th St., Omaha, Neb.

Ho, for Omaha!

As we have many customers in the Northwest, and believing they will appreciate the low freight rates obtained by purchasing goods from a railroad center nearer to them than we are, getting a direct through-freight rate, thus cutting the freight in half, we have established a branch house at 1730 South 13th St., Omaha, Neb., where we will keep a complete line of all Apian Supplies, the same as we do at Higginsville, Mo. With the quality of our goods, we believe most bee-keepers in the West are already acquainted, but to those who are not, we will say that our goods are par excellent. Polisht, snowy-white Sections, beautiful straw-

old hive. A blacker and an angrier colony of bees you never saw. They were so thick on the comb that we could not see it.

After they were divided they swarmed just the same. After they got done swarming I had four fair colonies, and one very weak one. We took off of these small colonies about 75 pounds of fine alfalfa honey. They have wintered fine this far, and I hope to have them build up strong.

LESLIE HAZEN.

Nemaha Co., Kan., March 13.

Bee Keeping in the "Old Dominion."

Bees did tolerably well for me last season. I had 44 colonies, mostly blacks, in the spring, and did not increase much, not more than four or five colonies. I got about 2,000 pounds of comb honey, mostly white clover, as we had a splendid crop of it last season, and a very good flow from buckwheat and fall flowers. I sold most of my honey in the home market for 12½ cents—some at 15 cents—but later on in the season I had to sell at 10 cents, as honey came in from some one else and cut the price.

I have now 43 colonies which are, I think, in very good condition. I do not think bees wintered very well here, as I hear a great deal of complaint about them dying. The winter has been quite open—not much real cold weather. The temperature has not been below zero during the winter—then only for one or two days at that point. I lost three or four colonies by neglecting to feed them more last fall.

Bees were flying for several days last week, and I fed them some while it was warm.

I am preparing to use all tall sections next season—only those of the 4¼x4¼x1½ which have starters of foundation in them, and others that the bees made comb in and did not get them filled. I have about 500 of them on hand, and will be ready when the season opens.

I also tried the Pettit system, to get the bees to the outside sections, and it workt like a charm; but I got pretty tired of boring so many holes, as I had no boring machine, and had to do it with a common brace.

I will use fence separators next season, as I tried them sufficiently last season to know that they are the best.

I would like to thank Mr. Wilcox, of Pennsylvania, for his kind answer to my question about the locust bloom. I took notice and found it just as he said.

P. I. HUFFMAN.

Rockbridge Co., Va., Feb. 17.

A Hint on Section-Cleaners.

On page 102 "Wisconsin's" suggestion to Mr. Golden about the felt is business. May I make a suggestion? I would not use any of the glue on any of the sandpaper. It dries hard and stiff, and you injure the elasticity of the cushion. In the machine shops we use the felt on the wheels, and on the blocks on the bench, and some have blocks of cork for hand work. The felt or cushion under the paper not only does nicer work, but the sandpaper will wear much longer than without it. We fasten our paper this way:

A little glue will keep the felt in place. Saw across the face of the wheel about two or more saw-kerfs wide, and ¼ or one inch deep; cut the paper so it will just draw tightly around the wheel, and each end turn sharply down so they will just tuck in the saw-kerf smooth and tight. Drive a strip of tin or wood between the ends of the paper a little below the surface clear across. It will not work out, and when the paper is worn out draw the tin wedge, and the paper comes right off readily. You can renew *ad libitum*, with no bother with the glue, and you always have a soft, yielding cushion. Now, this is my plan, and I never use glue to make the paper hard, and two or more thicknesses will do it.

Some might say that in this way there will be a seam where the ends come together. True, but the ends of the folded

paper come close together, and in practice you never know the difference. Our factories put the paper on in this way. I always do, and it is perfectly satisfactory, much better than to use glue. You see, two or more thicknesses of sandpaper glued together will make a hard surface, and defeat the object of the felt. A. W. HART.
Stephenson Co., Ill.

Introducing Queens, Etc.

I commenced the spring of 1897 with 15 colonies, increased to 21 by natural swarming, reared several fine Italian queens, and introduced them in the place of hybrids.

Right here I want to give my plan of introducing queens, as I have lost $\frac{3}{4}$ of the queens that I have introduced in cages.

When I rear a queen in a nucleus and she stands the test, I go to the hive that I want to introduce in, hunt out the queen and kill her, and the next day I take the three frames out of the nucleus and put them in a new hive with my young queen, worker bees and all. I then take two frames out of the hive that has no queen, and put one on each side of the three frames that has the queen, and leave them till the next morning. I then add two more frames, and the evening of the same day I finish filling the hive. I then have three frames of brood, honey and old bees left to go back to the nucleus to rear another queen.

I have introduced several queens with the above plan, and have not lost a single one while following it, and I think if one would take two or three frames out of a queenless hive and put into a new hive, and then introduce the queen in the cage to a small amount, there wouldn't be so much danger of getting her killed. Then after a few bees get used to her, follow the plan as given above.

I think my bees are all in fine condition. We have had several warm days, and I noticed to-day they were bringing in the bee-bread by the wholesale. W. W. BUCK.
Calloway Co., Ky., Feb. 10.

FREE FOR A MONTH.

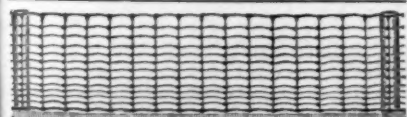
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but still is a "stayer." Come summer, come winter, The Page abides unchanged. We've told you over and again it's the coil that does it. That coil is patented by the
PAGE WOVEN WIRE FENCE CO., Adrian, Mich.

Convention Notices.

Connecticut.—The seventh annual meeting of the Connecticut Bee-Keepers' Association will be held at the Capitol, at Hartford, Wednesday, May 4, 1898—10:30 a.m. Every bee-keeper in the State should take an active interest in this meeting. All are cordially invited.
Mrs. W. E. RILEY, Sec.,
Waterbury, Conn.

Illinois.—The spring meeting of the Northern Illinois Bee-Keepers' Association will be held at the residence of Alexander Peterson, 5 miles northwest of Rockford, Tuesday, May 17, 1898. All are cordially invited.
B. KENNEDY, Sec., New Milford, Ill.

HONEY and BEESWAX

MARKET QUOTATIONS.

Chicago, April 13.—Best grade of white, 10 to 11c; fair grade, 8 to 9c; dark, 7 to 8c. Extracted, white, 5 to 6c; amber, 4 to 5c. Beeswax, 27c.

The active season for sale of comb honey is over until the marketing begins of the yield to be obtained in 1898.

R. A. BURNETT & CO.

Boston, April 14.—Fancy No. 1, in cartons, 13c; in glass-front cases, 12c; A No. 1, 11c; No. 1, 9 to 10c; No. 2, 9c. Extracted, white 6 to 7c; light amber, 5 to 6c. Beeswax is scarce at 26c.

Our market on comb and extracted honey has kept active at old prices, and as a result the stock is well cleaned up. There is very little call for anything but white in this market.
BLAKE, SCOTT & LEE.

Cleveland, April 14.—Fancy white, 12 to 12½c; No. 1, 11c; No. 1 amber, 9 to 10c; buckwheat, 8c. Extracted, white, 6c; amber, 4 to 5c.
A. B. WILLIAMS & CO.

San Francisco, April 6.—White comb, 8½ to 10c; amber, 6½ to 7½c. Extracted, white, 5½c; light amber, 4½ to 5½c. Beeswax, 24 to 27c.

A ship sailing this week for Hamburg took 316 cases. Sellers are not nearly so numerous as early in the season, and are inclined to be quite exacting at present in the matter of prices. Market is strong for comb and extracted, with supplies of latter light and stocks of comb showing steady decrease. The firmness is based mainly on the poor prospects for coming crop.

Detroit, March 22.—Fancy white is lower and now quoted at 11c. No. 1, 9 to 10c; fancy dark, 7 to 8c; No. 1 dark, 6 to 7c. Extracted, white, 5 to 6c; dark, 4 to 5c. Beeswax in good demand at 26 to 27c.

There is considerable dark and undesirable honey on commission now, and some of it will be carried over to another season.

M. H. HUNT.

Kansas City, April 9.—Fancy white, 1-lbs., 9 to 10c; No. 1, white, 9c; amber, 8c. Extracted, white, 5 to 5½c; amber, 4½ to 5c; dark, 4c. Beeswax, 20 to 22c.

Demand for both comb and extracted honey is fair.
C. U. CLEMONS & CO.

Minneapolis, Mar. 18.—Honey much more encouraging. Fancy white clover comb is selling here now at 10½ to 11½c. Not advisable to ship darker than amber. Extracted fancy white clover, 5½ to 6c; amber, 5c; dark, 4 to 4½c.

Outlook for honey much more encouraging.
S. H. HALL & CO.

Cincinnati, Mar. 21.—Demand fair for extracted, with insufficient supplies. Prices range from 4 to 6c, according to quality. Demand for comb is slow at 10 to 13c for best white. Beeswax in good demand at 20 to 25c for good to choice yellow.

CHAS. F. MUTH & SON,

Indianapolis, March 24.—Fancy white, 11 to 13c; No. 1, 10 to 11c; fancy amber, 9 to 10c. Extracted, white, 5 to 6c. Beeswax, 25 to 27c. Market appears to be well supplied and sales are rather slow for this time of the year. This is especially true of the amber and dark grades of comb honey. Beeswax is in good demand.
WALTER S. POWDER.

Milwaukee, March 8.—Fancy, 11 to 12c; A No. 1, 10 to 11c; No. 1, 10 to 10½c; No. 2, 9 to 10c; amber and dark, 7 to 8c. Extracted, in barrels, kegs and cans, white, 5 to 6c; dark, 4½ to 5c. Beeswax, 25 to 27c.

We are able to report an improved demand for fancy honey during the past few days, while the medium grades have also sold better, yet the surest sale is on the BEST. The supply continues equal to the demand, but the fancy grades are not in as good supply as the low and medium, which goes to prove that the fancy sells best—and the values better
A. V. BISHOP & CO.

Buffalo, March 11.—There is a good demand for strictly fancy 1-pound comb, at 10 to 11c; other grades, however, range from 9 to 7c, and even 6c when poor enough. Quite an amount of honey can be sold at this range. Extracted ranges from 4 to 6c, with a moderate demand.
BATTERSON & CO.

St. Louis, Feb. 9.—Fancy white comb, 10 to 11c; No. 1, 10c; amber, 9 to 10c; dark, 8 to 9c. Extracted, white, 5½ to 6c; amber, 5 to 5½c; dark, 4 to 4½c. Beeswax, 20 to 22c.
WESTCOTT COM. CO.



Just the Machine every bee-keeper ought to have, the Improved McCartney Foundation Fastener and Section Press combined.

THE BEST machine ever invented for pressing the sections together and fastening in starters. It cuts the foundation any desired length, and presses it on, all at one operation. If you want one this season order at once. For further information,

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Colony Bees in 8-frame Langstroth Hives, \$4. A good second-hand wheel for a little over half cost. Have some good fair privileges can go with it. A good business for the right party. Investigate. Address,

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We have arranged with a large bee-keeper in Lee County, Ill., (about 100 miles west of Chicago), to fill our orders for Italian Bees at the following prices there, which include a good Queen with each colony:

8 L. frames of bees in light shipping-case, \$3.75
5 at \$3.50 each.
8 L. frames of bees in dovetailed hive, \$4.25.
5 at \$4.00 each.

Prompt shipment after May 1, and safe arrival and satisfaction guaranteed. Address

GEORGE W. YORK & CO.,
CHICAGO, ILLS.

Williams' Self Hiver and Trap.—Something practical and economical. A combination Queen and Drone-Trap, used also as a self-hiver of swarms. Illustrated and described on page 131. Address for circular, GEO. W. WILLIAMS, Humansville, Polk Co. Mo.

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Every citizen of the republic should be familiar with the Constitution and all the charters of our national policy. You can find them collected in

Our National Charters,

a pamphlet giving the Constitution and Amendments, The Declaration of Independence, the Articles of Confederation, Washington's Farewell Address, the Dictatorship conferred on Washington, the Ordinance of 1787, the Monroe Doctrine, and the Emancipation Proclamation. As a matter of patriotic pride, if for no other reason, every American should be familiar with these documents. Price 50 cents.

Shall I Study Law?

BY ONE WHO HAS TRIED.

This book was written for men who are thinking of taking up the law as a special study, either for practice, for general culture, or for business purposes, and discusses the matter fully, giving reasons for and against it, together with much practical instruction, enabling men to know what to do in answer to this question.

Paper bound, 69 pages. Price 50c.

Sent on Receipt of Price.

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For sending us One New Subscriber to the Bee Journal for 1 year (at \$1.00) we will mail as a Premium either of the above books.

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WE can now furnish the very best that can be made from pure wax. Our New Process of Milling enables us to surpass the previous efforts of ourselves and others in the manufacture of Comb Foundation.

It is always Pure and Sweet.
It is the kind that does not sag.
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If you once try it you will have no other. Samples furnished **FREE**. Large illustrated Catalog of all kinds of

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Including their discounts for Goods wanted for use another season. It will pay you to send the list of Goods wanted. **M. H. HUNT** Cash for Beeswax. **BELL BRANCH, MICH.**

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TO SAY to the readers of the **BEE JOURNAL** that **DOOLITTLE**

has concluded to sell —**BEEES** and **QUEENS**— in their season, during 1898, at the following prices:

One Colony of Italians on 9 Gallup frames, in light shipping-box \$6.00
Five Colonies..... 25.00
Ten Colonies..... 45.00
1 untested queen. 1.00
6 " queens 5.50
12 " " 10.00
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1 select tested queen 2.00
3 " " Queens 4.00

Select tested queen, previous season's rearing. 3.00
Extra Selected for breeding, **THE VERY BEST**. 5.00
About a Pound of **BEEES** in a Two-frame Nucleus, with any Queen, \$2.00 extra.

Circular free, giving full particulars regarding the Bees and each class of Queens.

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Because it has always given better satisfaction than any other.

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We Guarantee Satisfaction.

What more can anybody do? **Beauty, Purity, Firmness, No Sagging. No Loss. PATENT WEED PROCESS SHEETING.**

Send Name for Our Catalog, Samples of Foundation and Vell Material. We sell the best **VELLS**, cotton or silk.

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LANGSTROTH ON THE HONEY-BEE, Revised.
The Classic in Bee-Culture—Price, \$1.25, by mail.

CHAS. DADANT & SON,

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Cowan Extractors.
Porter Bee-Escapes—the best made.
Dovetailed Hives—with Danz. Patented Cover and Bottom.
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